Holmium Laser Enucleation of the Prostate for BPH Patients

Points to remember

- Holmium laser enucleation of the prostate (HoLEP) is a minimally invasive treatment for benign prostatic hyperplasia (BPH). Its short- and long-term outcomes are superior to those associated with transurethral resection of the prostate and suprapubic prostatectomy.
- HoLEP is performed transurethrally, using a holmium laser to separate the plane between the adenoma and the prostate capsule.
- HoLEP allows complete resection of all adenomatous tissue, minimizing the need for future retreatment.

The challenge

Benign prostatic hyperplasia (BPH) is a noncancerous enlargement of the prostate gland that often leads to bladder outlet obstruction and restriction of urine flow. Symptoms may include:

- Frequent urination (especially at night)
- Urgency
- Burning or pain during urination
- Leakage of urine
- Diminished stream

An estimated 40% of men in their 50s and 90% of men in their 80s experience symptoms of BPH. When medications and minimally invasive office-based procedures fail to provide lasting benefits, surgical intervention may be necessary.

For decades, transurethral resection of the prostate (TURP) has been the gold standard surgical treatment for BPH. Depending on surgeon experience, however, up to 25% of patients may experience some type of complication after TURP, including:

- Bleeding
- Hyponatremia
- Urinary incontinence
• TURP also subjects patients to risks inherent in any surgical procedure, as well as a hospital stay of 3 to 4 days and recovery time of 4 to 6 weeks.

• Laser ablation procedures vaporize the obstructive portion of BPH while minimizing the risk of damage to healthy tissue impotence or prolonged incontinence. Ablative procedures can be performed on an outpatient basis and offer quick recovery time.

• Although they can provide swift symptom relief, some laser ablation procedures may result in prostate swelling with temporary need for catheterization. The long-term durability of ablative procedures has not been widely assessed, and there is a risk of prostate regrowth requiring repeat surgical intervention in some cases.

A new approach

HoLEP is typically performed with the patient under general anesthesia. The surgeon uses the laser to enucleate the entire adenoma, leaving just the capsule in place. The surgeon pushes the excised adenoma into the bladder and then uses a morcellation device to grind up and remove the tissue.

Advantages of HoLEP

• The procedure may be performed on any size prostate gland.

• The obstructing prostate tissue is completed excised down to the prostate’s encapsulating structure, resulting in a retreatment rate of less than 2%.

• Same day or next day hospital discharge is possible when the procedure is performed in a 23-hour observation setting.

• Patients experience nearly immediate symptom relief and fast return to normal activity. Next-day catheter removal with limited swelling generally allows patients to void painlessly and immediately.

• HoLEP allows tissue preservation for pathologic examination. Because adenomatous tissue is excised rather than ablated, surgeons can examine specimens for prostate cancer or other abnormalities. Cancer is found in about 10% of HoLEP procedures, even in patients previously screened. In many cases the cancer identified is of low malignant potential.
The potential for complications is reduced. The low depth of penetration of the holmium laser causes little damage to healthy tissue, and the risk of excessive bleeding associated with traditional surgical approaches is reduced.

All patients experience hematuria for 1 to 2 weeks after the procedure, but the need for blood transfusion is low, around 1%.

Since normal saline irrigation is used for the procedure, there is no risk of hyponatremia, regardless of prostate size.

Widely acknowledged as a benchmark BPH procedure, HoLEP requires specialized skills and training.

The laser cuts parts of the prostate tissue during laser enucleation.
How do I prepare for the procedure?

Your doctor will advise you in detail about how to prepare for the procedure. You must not eat, drink, or smoke for 6 hours before surgery to prepare for the anaesthesia. If you are taking any prescribed medication, discuss it with your doctor. You may need to stop taking it before surgery.

How long will it take me to get back to my daily activities?

Usually you can leave the hospital 1 or 2 days after surgery. Your urine may contain some blood and you may feel pain when you urinate. This can last up to several weeks.

For 4-6 weeks after the surgery:

- Drink 1-2 litres every day, especially water
- Do not lift anything heavier than 5 kilograms
- Do not do any heavy exercise and avoid bike riding
- Do not take thermal baths or go to the sauna
- Prevent constipation by adapting your diet
- Discuss any prescribed medication with your doctor

Avoid having sex for 2-3 weeks. After laser enucleation, you may suffer from retrograde ejaculation. This is a condition where semen can no longer leave through the urethra during orgasm. Instead it goes into the bladder and later leaves your body during urination.

You need go to your doctor or back to the hospital right away if you:

- Develop a fever
- Are unable to urinate on your own
- Have heavy blood loss or pain
Advantages of laser enucleation

- Immediate improvement of the urine flow
- Short hospital stay
- Shorter period of using a catheter
- Low risk of complications
- Effective for all prostates, especially for large ones
- Possibility to analyse the prostate tissue after the surgery

Disadvantages of enucleation

- Surgery may take longer for small prostates
- Painful urination for some time after the surgery
- Risk of urinary retention, urinary tract infection, and urgency
- Very low risk of urinary incontinence